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103	20

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Please find below a communication from the EXAMINER in charge of this application.

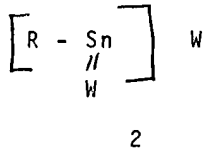
Commissioner of Patents.

A ~~SHORTENED STATUTORY~~ TIME LIMIT PERIOD FOR RESPONSE TO THIS ACTION IS SET TO EXPIRE 30 ~~MONTHS,~~ DAYS FROM THE DATE OF THIS LETTER.

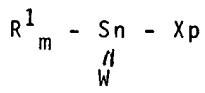
The following claims found allowable are suggested for purposes of interference with U.S. Patent No. 4,360,619. No corresponding claims are present in this application. Basis for the claims is located in the specification at pages 15 and 16 and the initial paragraph of page 21:

1. A composition for stabilizing halogen- containing polymers comprising:

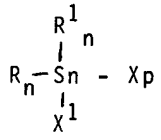
A. an organotin compound or mixture of organotin compounds having one or more tetravalent tin atoms which each have at least one direct tin to carbon bond selected from the formulas:



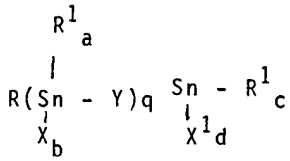
(I)



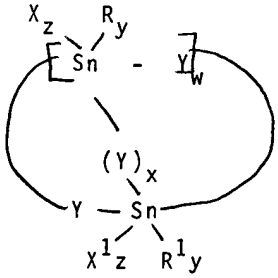
(II)



(III)



(IV)



(V)

$$R_f\ Sn\ -(OC-C=C\ C-OR)_{4-f} \qquad (VI)$$

$$R_K\ Sn\ -(S-R'-OH)_{3-K}\ (S) \qquad (VII)$$

wherein X and X^1 are the same or different and are $-SR^2$ or $-\overset{O}{\overset{\|}{C}}-R^8$,

Y is $-(S)_v$, $-W-R^3-W^1-$, $-S-R^4\overset{O}{\overset{\|}{C}}-O$,

$-SR^4-\overset{O}{\overset{\|}{C}}-O-R^5-O-\overset{O}{\overset{\|}{C}}-R^4-S-$, $-SR^3-O-\overset{O}{\overset{\|}{C}}-R^4-S-$,

$SR^3-O-\overset{O}{\overset{\|}{C}}-R^6-\overset{O}{\overset{\|}{C}}-OR^3-S-$, or $-O-\overset{O}{\overset{\|}{C}}-R^6-\overset{O}{\overset{\|}{C}}-O-$,

W and W^1 are the same or different and are oxygen or sulfur;

R and R^1 are the same or different and are hydrocarbyl, R^2 is hydrocarbyl,

$-R^4-C-OR^7$, $-R^3-O-\overset{O}{\overset{\|}{C}}-R^8$, $-R^4-O-\overset{O}{\overset{\|}{C}}-R^4-\overset{O}{\overset{\|}{C}}-OR^8$,

and $-R^4-\overset{O}{\overset{\|}{C}}-O-R^3-O-\overset{O}{\overset{\|}{C}}-R^8$,

R^3 is hydrocarbyl,

R^4 is hydrocarbyl,

R^5 is hydrocarbyl,

R^6 is nothing or hydrocarbyl, R^7 is H or

R^8, R^8 is hydrocarbyl.

R^{25} = R^1 or H

f = 1 to 3

k = 1 to 3

m = 1 or 2

n = 0, 1 or 2

n^1 = 0, 1 or 2 and p=1 or 2 with the proviso that $n+n^1$ = 1 or 2 and $n+n^1$ + p=3; a= 0, 1 or 2, b=0, 1 or 2, q= an integer of 1, C= 1, 2 or 3, d= 0, 1 or 2 with the proviso that a+b=2 and c+d=3; v= an integer from 1 to 4; and w= 0, 1 or 2, x=o or ; y=1 or 2, z=0 or 1;

B. At least one mercaptan which is a mercapto lower alkanol ester of a carboxylic acid containing 2 to 20 carbon atoms; and

C. The requisite presence of a halogen - containing tin compound which is present in an amount up to about 33% of the organo tin stabilizer (A), said halogen - containing tin compound selected from the compounds having the formula;

$R''_{(g)} - Sn - Q_{(h)}$

Q = Cl, Br or I

R" is hydrocarbyl and where g is an integer of 1 to 3 and h is an integer of 1 to 3.

2. A composition according to claim 1 wherein the organotin compound or mixture of organotin compounds is according to formula (I).

3. A composition according to claim 1 wherein the organotin compound or mixture of organotin compounds is according to formula (II).

4. A composition according to claim 1 wherein the organotin compound or mixture of organotin compounds is according to formula (III).

5. A composition according to claim 1 wherein the organotin compound or mixture of organotin compounds is according to formula (IV).

6. A composition according to claim 1 wherein the organotin compound or mixture of organotin compounds is according to formula (V).

7. A composition according to anyone of

claims 1 to 6 wherein the mercaptan - containing organic compound has the formula

HS - R^a- O $\overset{O}{\overset{\|}{C}}$ - R^b - G where R^a is lower alkyl, R^b is hydrocarbyl and G is hydrogen,

carboxy or -$\overset{O}{\overset{\|}{C}}$-$R^{13}$-SH where R^{13} is an optionally substituted hydrocarbyl group.

8. A composition according to anyone of claims 1 to 6 wherein the mercaptan compound is according to the formula HS- $CH_2(CH_2)_1$-O-$\overset{O}{\overset{\|}{C}}$-$R^{16}$ where i is an integer of 0, 1, 2 or 3 and R^{16} is hydrogen or hydrocarbyl.

9. A composition according to claims anyone of 1 to 6 wherein the mercaptan compound is according to the formula HS-$CH_2(CH_2)$i - R^{17}-(CH_2)i -CH_2SH where i is an integer of 0, 1, 2 or 3 and R^{17} is

-O-$\overset{O}{\overset{\|}{C}}$-$R^{18}$ $\overset{O}{\overset{\|}{C}}$-O-, or -O-$\overset{O}{\overset{\|}{C}}$- CH= CH$\overset{O}{\overset{\|}{C}}$-O- where R^{18} is hydrocarbyl.

10. A composition according to any one of claims 1 to 6 wherein the mercaptan compound has the formula HS-CH_2-(CH_2)i-

$O\text{-}\overset{=O}{C}R\text{-}\overset{OH}{\overset{|}{C}}\text{-}\overset{=O}{O}(CH)_i\text{-}CH_2SH$ where R is as defined above and i is an integer of 0, 1, 2 or 3.

11. A composition according to claim 2 wherein in formula (I), R is methyl, butyl or octyl and W is sulfur.

12. A composition according to claim 3 wherein in the formula (II) R^1 is methyl, or butyl, X is sulfur, X is SR^2 where R^2 is $-R^3O-\overset{=O}{C}-R^8$ and m=1 and p=1.

13. A composition according to claim 4 wherein in formula (III), R is methyl or butyl, R^1 is methyl or butyl, X is $-SR^2$ where R^2 is $R^3O\ C^{=O}-R^8$, X^1 is SR^2 where R^2 is $-R^3O\overset{=O}{C}-R^8$, n=0 or 1, n^1-0 or 1, $n+n^1=1$ and p=2.

14. A composition according to claim 5 wherein in the formula (IV), R is methyl, X is SR^2 where R^2 is $-R^3\text{-}O\text{-}\overset{=O}{C}\ R^8$, R^1 is methyl, X^1 is $-SR^2$ where R^2 is $-R^3\text{-}O\text{-}\overset{=O}{C}\text{-}\ R^8$, Y is -S-, a=o, b=2, c=1, d=2 and q=1.

15. A composition according to claim 6 wherein in formula (V), R is methyl, R^1 is

methyl, Y is -S-, w=1, x is 1, y = 1 and Z=0.

16. A composition according to claim 8 wherein i = 1.

17. A composition according to claim 9 wherein R^{17} is $-O-\overset{O}{\overset{\|}{C}}-CH=CH-\overset{O}{\overset{\|}{C}}-O-$.

18. A composition according to claim 10 wherein i=1.

19. A composition according to claim 1 wherein in the halogen - containing tin compound R" is methyl, Q is Cl, g = 2 and h=2.

20. A polymer composition stabilized against the deteriorative effects of heat comprising a halogen - containing organic polymer and a stabilizing effective amount of the composition of claim 1.

21. A process for stabilizing a halogen containing organic polymer against the deteriorative effects of heat comprising admixing said polymer with a stabilizing effective amount of the composition according to claim 1.

APPLICANT SHOULD MAKE THE CLAIMS WITHIN

THIRTY DAYS FROM THE DATE OF THIS LETTER. FAILURE TO DO SO WILL BE CONSIDERED A DISCLAIMER OF THE SUBJECT MATTER INVOLVED UNDER THE PROVISIONS OF 37 CFR 1.203.

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5/2/84
6/4/84

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GROUP 150 - ART UNIT 153